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139. **By Henry Gundr.**— Let e be the eccentricity, or ratio of polar compression to the equatorial radius of the earth. Find the average length of the earth's radius.

140. **By Prof. D. Trowbridge.**— A point is taken at random within a given circle, and a random chord drawn through it. If another chord be drawn at random, what is the probability that it will intersect the first?

Query. By Henry Gunder. — In Thompson and Tait's "Elements of Natural Philosophy" it is stated that, "at the southern base of a hemispherical hill radius a and density ρ, the true latitude (as measured by the aid of the plumb-line) is diminished by the attraction of the mountain by the angle $\frac{2}{3}\rho\pi a \div (G - \frac{4}{3}\rho a)$, where $G =$ the attraction of the earth in same units." How is this proved?

BOOK NOTICES.

The Cone and its Sections treated geometrically, by S. A. **Renshaw**, of Nottingham. London: Hamilton, Adams, & Co., Paternoster Row. 1875. Crown 4to, 180pp. Price 12|6.

In this valuable treatise on the Conic Sections, the author has mainly derived the properties of the curves from the *cone*, and has shown that they partain alike both to the scaline and right cone.

The Geometrical method of demonstration is chiefly employed, and the student has the invaluable aid of elaborate diagrams, which enable him readily to grasp and hold the line of argument pursued. The value of the book, for students, is also greatly enhanced by the variety of examples it contains.—Students of this beautiful and interesting branch of geometry will surely be interested and instructed by a perusal of this book.

New and Easy Method of Solution of the Cubic and Biquadratic Equations; by Orson Pratt, Sen. London. 151 pp. 8vo.

We are not at present prepared to speak of the merits of this book, but insert a singe paragraph from the author's preface which will indicate its character.

"The author's discovery of the *Equation of Differences*, together with several other kindred discoveries, resulting from the properties of this equation, has enabled him to entirely dispense with every process for finding the limits of the roots; to dispense with the theorem of Sturm, and all similar theorems, having for their object the determination of the number of real roots and their situation in the arithmetical scale; to dispense with all processes for finding the first figure of a root by trial or successive substitution; and to dispense with the successive trial divisors used by Horner."

The Wittenberger; a mothly periodical, published at Springfield Ohio, has a Mathematical department, edited by Wm. Hoover of Bellefontaine, Ohio.

Correction. — On p. 155, Vol. III, Eq. (4), leave off the numerals 1.2, 1.2.3, &c., in the denominators. The four following equations are also wrong, but they can now easily be corrected. The error was made by me in copying. D. T.